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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,195	10/12/2001	Gyanesh P. Khare	33924US	1440

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EXAMINER

ARNOLD JR, JAMES

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/976,195	KHARE, GYANESH P.	
	<b>Examiner</b>	<b>Art Unit</b>	
	James Arnold, Jr.	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 12 October 2001.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-33 and 51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 17-33 is/are allowed.
- 6) Claim(s) 1-16 and 51 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All   b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
 a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,10, and 14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kinoshita et al. (USPN 6,068,824).

The Kinoshita reference discloses a sorbent composition comprising a zinc oxide, a carrier, and a reduced-valence noble metal with a valence less than the valence of the metal of the reduced-valence noble metal in the common oxidized state, with a reduced valence less than two, or a reduced valence of zero. See Abstract and Column 2, lines 27-34.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3-9, 11-13, and 15-16 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al. (USPN 6,068,824).

The reference discloses a composition wherein the reduced-valence noble metal is present in the range of from about 0.01 to about 10 weight percent. See Column 3, lines 20-25. The reference discloses a composition wherein the amount of zinc oxide varies according to the specific components of the adsorbent utilized. See Tables 3, 4, and 5. The reference discloses a sorbent composition comprising inorganic carrier components including silica, alumina, titania, zirconia, diatomaceous earth, synthetic zeolites, natural zeolites, and combinations thereof. See Column 3, lines 30-55. The reference discloses a composition containing the reduced-valence noble metals Platinum, Palladium, Ruthenium, and Rhodium. See Column 3, lines 3-12. The reference discloses a particulate sorbent composition with a particle diameter average in the range of 1 to 10 mm. See Column 7, lines 18-37.

The reference does not disclose the full range of weight percent for the reduced-valence noble metal from 0.01 to about 25 weight percent. The reference does not disclose the inorganic carriers expanded perlite, silica gel, kieselguhr, zinc aluminate, zinc titanate, zinc silicate, magnesium aluminate, and magnesium titanate. The reference does not disclose the range of weight percent for the alumina compound from about 1 to about 30 weight percent nor the silica compound weight percent of from about 5 to about 85 weight percent. The reference does not disclose a composition wherein the reduced-valence noble metal is selected from the group consisting of iridium and osmium. The reference does not disclose a sorbent composition is a

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particulate in the form of a microsphere having a mean particle size in the range of from about 1 micrometer to about 500 micrometers. The reference does not disclose zinc oxide in the range of from about 10 to about 90 weight percent.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the full range of weight percent for the reduced-valence noble metal from 0.01 to about 25 weight percent because an overlapping range is disclosed by the reference and it would be appropriate to adjust the weight percent in any way still that still renders the sorbent composition effective. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the inorganic carrier group consisting of expanded perlite, silica gel, kieselguhr, zinc aluminate, zinc titanate, zinc silicate, magnesium aluminate, and magnesium titanate because of the silica and alumina components in some of the carriers and because of the strength of the metal compositions. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the range of weight percent for the alumina compound from about 1 to about 30 weight percent nor the silica compound weight percent of from about 5 to about 85 weight percent because the reference discloses the use of alumina and silica as carriers and it would be appropriate to adjust the percent in any way that still renders the sorbent composition effective. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a composition wherein the reduced-valence noble metal is selected from the group consisting of, iridium and osmium because as noble metals these elements have similar properties platinum, palladium, ruthenium, and rhodium. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a sorbent composition that is a particulate in

the form of a microsphere having a mean particle size in the range of from about 1 micrometer to about 500 micrometers because the reference discloses that the shape of the sorbent is not particularly limited and because the reference generally discloses the use of a sorbent composition and it would be appropriate to adjust the sorbent composition's size in any way that still renders the composition effective. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a composition wherein zinc oxide is present in the range of from about 10 to about 90 weight percent because the amount of zinc oxide varies according to the specific components of the adsorbent utilized, and because the reference discloses the use of zinc oxide in the sorbent composition and it would be appropriate to adjust the weight percentages while not diluting the effectiveness of the sorbent composition.

*Allowable Subject Matter*

Claims 17-33 are allowable. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not disclose a process for making a sorbent composition suitable for desulfurization comprising the steps of (a) admixing zinc oxide and a carrier to provide a support mix; (b) particulating the support mix to provide a support particulate; (c) incorporating said support particulate with a noble metal to provide a promoted particulate comprising an unreduced noble metal; and (d) reducing said promoted particulate to provide a reduced-valence noble metal.

*Response to Arguments*

Applicant's arguments have been fully considered but are deemed unpersuasive. Applicant's election with traverse of Group 1, Claims 1-33 in the paper filed September 30, 2003 is acknowledged. The traversal is on the ground(s) that all art classes referred to in the previous

Office action would properly be searched even if Group II and Group III claims did not exist. This is not found persuasive because claims 34-48 and 49-50 are unrelated to claims 1-33 and have different functions than claims 1-33. See MPEP Section 806.04 and 808.01. Claims 1-33 relate to a sorbent and a process for making a sorbent and claims 34-48 and 49-50 relate to a desulfurization process and a desulfurization product.

The requirement is still deemed proper and is therefore made FINAL.

Applicant asserts that the 102(b) rejections are not proper because the Kinoshita reference does not disclose or suggest a reduced valence noble metal. Kinoshita, however, discloses specific examples of reduced valence noble metals in addition to a zinc oxide and carrier. See abstract and Column 2, lines 27-34. The applicant also remarks that the removal of sulfur is not disclosed or suggested by Kinoshita. The Examiner does not concede the truth of this statement. Assuming arguendo, however, that the statement is true, it is not an issue because every element of the applicant's composition in claims 1, 2, 10, and 14 is disclosed by the Kinoshita reference. Since each element of the composition is disclosed, then the composition disclosed by Kinoshita may be used for the same purposes as the applicant's composition since they are essentially in every regard the same composition. The applicant also argues that the Examiner broadly argues that everything lacking would have been obvious to one having ordinary skill in the art. This is simply untrue. The Examiner provides specific statements of reasons for obviousness for each limitation not disclosed by the reference. Therefore, for at least the aforementioned reasons the Examiner maintains that applicant's disclosure in claims 1-16 would have been obvious to one having ordinary skill in the art at the time the invention was made.

*Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

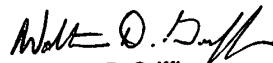
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Arnold, Jr. whose telephone number is 703-305-5308. The examiner can normally be reached on Monday-Thursday 8:30 AM-6:00 PM; Fridays from 8:30 AM-5:00 PM with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Calderola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

ja  
December 14, 2003

  
Walter D. Griffin  
Primary Examiner